U.S. Department of Commerce
National Institute of Standards and Technology
Gaithersburg, MD 20899

Certificate Number: 97-133A1

National Type Evaluation Program

Certificate of Conformance

for Weighing and Measuring Devices

For:

Load Cell
Double-Ended Shear Beam, Compression
Model: DB 35000S and DB 50000S
n_{max}: Multiple Cell: 10 000
Capacity: 35 000 lb and 50 000 lb

Accuracy Class: III L

Submitted by:

Cardinal/Detecto Scale Mfg. Company
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Standard Features and Options

Double ended shear beam strain gauge load cell
Stainless steel construction

Model	Capacity (lb)	v_{min} (lb)	Minimum Dead Load (lb)
DB35000S	35 000	1.0	350
DB50000S	50 000	1.4	350

Number of wires: 4 wires
Excitation voltage: 15 VDC maximum
Nominal output: 2.0 mV/V

Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

This device was evaluated under the National Type Evaluation Program (NTEP) and was found to comply with the applicable technical requirements of Handbook 44, "Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: October 6, 1998

Gilbert M. Ugiansky, Ph.D.
Chief, Office of Weights and Measures
Issue Date: April 15, 1999

Cardinal/Detecto Scale Mfg. Company
Double Ended Shear Beam Compression Load Cell
Model: DB 35000S and DB50000S

Application: The load cells may be used in Class III L scales for multiple cell applications consistent with the model designations, number of scale divisions, and parameters specified in this Certificate. Load cells of a given accuracy class may be used in applications with lower accuracy class requirements provided the number of scale divisions, the v_{min} values, and temperature range are suitable for the application. The manufacturer may market the load cell with fewer divisions (n_{max}) and with larger v_{min} values than those listed on the Certificate. However, the load cells must be marked with the appropriate n_{max} and v_{min} for which the load cell may be used.

Identification: A pressure sensitive identification badge containing the manufacturer, model designation, and serial number is located on the load cell. All other required information, if not marked on the load cell, must be on an accompanying document including the serial number of the load cell.

Test Conditions: This Certificate supersedes Certificate of Conformance Number 97-133 and is issued to include the 50 000-lb capacity load cell. Two 50 000-lb capacity load cells were tested at NIST using dead weights as the reference standard. The data were analyzed for multiple load cell applications. The cells were tested over a temperature range of -10 °C to 40 °C. Three tests were run on each cell at each temperature. The temperature effect on zero was measured and a time dependence (creep) test was performed. The barometric pressure test was waived due to the insensitivity of the load cell design to changes in barometric pressure. Previous test conditions are listed below for reference.

Certificate of Conformance Number 97-133: Two 35 000-lb capacity load cells were tested at NIST using dead weights as the reference standard. The data were analyzed for multiple load cell applications. The cells were tested over a temperature range of -10 °C to 40 °C. Three tests were run on each cell at each temperature. The temperature effect on zero was measured and a time dependence (creep) test was performed. The barometric pressure test was waived due to the insensitivity of the load cell design to changes in barometric pressure.

The results of the evaluations indicate the load cells comply with applicable requirements of NIST Handbook 44.

Type Evaluation Criteria Used: NIST Handbook 44, 1999 Edition

Tested By: NIST Force Group, NIST Office of Weights and Measures

Information Reviewed By: T. Ahrens (NIST) 97-133; G. Newrock and J. Williams (NIST) 97-133A1